



Summer 2004

Service Connection

THE DRINKING WATER PROGRAM NEWSLETTER
"Working together for Safe Drinking Water."



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Municipal Notification: How Are We Doing?

By Andy Tolman

In 2000, the Legislature enacted Public Law 761. One of the provisions of that law was to provide public water suppliers (PWS) with "abutter" status in local land use decisions. These land use decisions include subdivisions, zoning changes, siting of junkyards, expansion of a facility using a subsurface waste disposal system, or any other municipal land use project requiring notice to abutters.

The area in which this notification is required is defined as the "public water supply source water protection area". This area is defined as "an area that contributes recharge water to a surface water intake or public water supply well". In order to qualify, the area must be "identified and mapped by the Department of Human Services and that information must be given to the municipality in which the source water protection area is located."

We have recently talked to several community PWS staff who indicate that they have received little or no feedback, and no notifications, from their communities. While we had not anticipated full compliance with this law, we had hoped that it would improve communication between municipal decision makers and PWS managers.

Since the law was enacted, the Drinking Water Program (DWP) has sent four mailings to municipalities with source protection areas: three have included wall maps showing source protection areas,

and the fourth included both a map and the summary of the assessment results for the locality. All four have included copies of the law, and explanatory materials. We have also worked with the Mitchell Center to produce an educational pamphlet about the law (we would be happy to send more copies to PWSs). An article was published in the Maine Townsman, and we have gone to every Maine Municipal Association meeting with map examples and handouts. The maps, and PWS contact information, are also available on the DWP's secure internet mapping site, http://www.megisims.state.me.us/dwp_sdws/default.jsp.



So, what do we do next? Public water suppliers need to take the initiative to remind their municipalities of this requirement. We will continue to work on building awareness and understanding of the need for source protection through the comprehensive planning process, Project NEMO (Non-point

Education for Municipal Officials), code enforcement and plumbing inspector training, and we will continue to update maps and provide information through mailings. If you approach your local officials and do not find them cooperative, please let us know. Contact Andy Tolman at (207) 287-6196 or by e-mail, andrews.i.tolman@maine.gov. If we cannot find a way to make this law help us, we will need documentation to go back to the Legislature. Source protection is the first and most important line of protection for public health, and municipal awareness and cooperation is a key part of making it happen.

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Congratulations!

The Maine Drinking Water Program's Source Water Protection Section was nominated for the U.S. Environmental Protection Agency Environmental Merit Award. The award is presented annually to recognize outstanding environmental advocates who have made significant contributions toward preserving and protecting our natural resources.

Public Law 761

Please let us know if you are or are not receiving abutter notification letters from your town office. We can help. Call Andy Tolman at (207) 287-6196 or e-mail him at andrews.l.tolman@maine.gov.

Security Responsibilities

Following Abe Habib's departure from the Drinking Water Program (DWP), Bill Johnson has assumed the duties and position of Security Coordinator. To assist Bill, the DWP instituted a Security Committee. The Security Coordinator chairs the Security Committee and is the primary link for security issues between the DWP, regulated water systems and other agencies. The Security Coordinator coordinates training opportunities for staff and water system personnel; administers the Water Protection Security Grant; assists water systems with vulnerability assessment and emergency response planning activities; informs public water systems of official security and emergency notices and communications; serves on the NEWWA Security Subcommittee; and serves as a member of the steering committee for the EPA's Law Enforcement Initiative for Safe Drinking Water. Any questions concerning security issues, vulnerability assessments or emergency response planning should be directed to Bill Johnson at (207) 287-5678.



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The Department of Human Services (DHS) does not discriminate on the basis of disability, race, color, creed, gender, age, or national origin, in admission to, access to, or operations of its programs, services, or activities, or its hiring or employment practices. This notice is provided as required by Title II of the Americans with Disabilities Act of 1990 and in accordance with the Civil Rights Act of 1964 as amended, Section 504 of the Rehabilitation Act of 1973, as amended, the Age Discrimination Act of 1975, Title IX of the Education Amendments of 1972 and the Maine Human Rights Act. Questions, concerns, complaints or requests for additional information regarding the ADA may be forwarded to DHS' ADA Compliance/EEO Coordinator, State House Station #11, Augusta, Maine 04333, 207-287-3488 (V), 207-287-4479 (TTY). Individuals who need auxiliary aids for effective communication in program and services of DHS are invited to make their needs and preferences known to the ADA Compliance/EEO Coordinator. This notice is available in alternate formats, upon request.

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Joy M. Adamson, Editor
Drinking Water Program
Division of Health Engineering
Bureau of Health
Department of Human Services
11 State House Station, 161 Capital Street
Augusta, Maine 04333-0011
TEL: (207) 287-5681 TTY: (207) 287-5550
FAX: (207) 287-4172
E-mail: joy.adamson@maine.gov
Web Address: <http://www.medwp.com>

Determining the Population of your Water System

By Nate Saunders

What type of public water system are you operating? Classification of a public water system is based on the number of people who have access to water, or on its availability to the public. By definition, a public water system is a water system that serves 25 or more people or has 15 service connections for 60 or more days per year.

There are three types of public water systems. Transient water systems, the most common group, are restaurants, campgrounds, summer camps, and any other small business that regularly serve 25 or more people. The key characteristic of a transient system is that the population served is always changing. However, any restaurant or camp with 25 or more employees will be regulated based on the number of employees and not on the public served. The next category is the non-transient, non-community system, which includes schools with 25 students and businesses with at least 25 full-time equivalent (FTE) employees served at least 6 months of the year. The third type is the community system, which includes towns, mobile home parks, nursing homes and apartments. Community systems have people living there year round.

All populations are determined by information provided by the facility at the time of new source approval, and are confirmed by the field services on follow-up system inspections. Below is a table summarizing the most common multipliers used in the determination of population served for a public water supply. Contact the Drinking Water Program for information if you questions on how to calculate your population.

Population Equivalence for Public Water Systems

Community Water Systems

Apartments

Population = Living units x 2.5 people per unit

Mobile Home Parks

Sites = # of licensed sites (Manufactured Housing Board holds license)

Population = # of licensed sites x 2.5 people per site

Nursing Homes

Population = Beds + total staff (total staff includes staff for all shifts)

Senior Citizens Housing

Population = living units x 1.5 people per unit

Water Utilities (Districts, Departments, etc.)

Population = Services x 2.5 people per connection

Non-Transient, Non-Community Water Systems (Schools & Businesses with more than 25 staff)

Schools & Businesses

Population = students + staff (for all shifts)

Clinics & Medical Centers

Population = # of beds + staff (for all shifts)

Transient Water Systems (Boy's and girl's camps, restaurants, & motels)

Restaurants & Eating Establishments

Open for breakfast, lunch, and dinner – minimum 10 seats

Population = # of licensed seats x 5.0 people per seat

Open for less than three meals – minimum 10 seats

Population = # of licensed seats x 3.0 people per seat

Open for only one meal per day with one group (no turnover)

Population = # of licensed seats x 1.0 person per seat

Take-out restaurants (no seats)

Population = 25 minimum: evaluate on a case-by-case basis

Lodging Establishments (Hotels & Motels)

Population = # of rooms x 2.0 people per room

Camping Facilities

Population = # of sites x 2.5 people per site

Summer Camps (Scouts, boy's & girl's)

Population = camp capacity + total staff (all shifts)

Other Facilities

Population = 25 minimum: evaluated on a case-by-case basis

Bottled Water Companies

Population = 25 (not adjusted) (Note: AFM Fee is based on production, not population.)



Have You Ever Fixed One Problem and Created Another?

By Dana A. Ivers

How about resolving problems others create? Water operators have been called on to resolve numerous problems that a customer, a contract employee, or a fire fighter has created. At the Drinking Water Program (DWP), we hear about some of the incidents and a few are real eye-openers. As the Compliance Officer for the Lead and Copper Rule and Cross-Connection Control Rules I would like to make all water operators aware of several incidents that have happened recently. Sometimes I only get to hear part of the story, but I still would like to share them with you.

Changes in Water Chemistry Increases Lead and Copper Levels: A water system needs to reduce their disinfection by-products. After reviewing several disinfection treatment options the water system determines that ozone and chloramines are their best option. The disinfection by-products decrease, but the next round of lead and copper samples show an elevated lead level in their customers' homes. When the water system changed the chemistry of the water, they increased the corrosiveness of the water. Water treatment changes have caused several water systems to fail lead. This has occurred a few times here in Maine, but not to extent that it did in the Washington D.C. area. Whenever a water system changes the water chemistry, the lead and/or copper levels may be adversely affected. By monitoring the water quality parameter at the treatment plant and in the distribution system (your bacteria sample sites) prior to making any changes you could help provide crucial data needed when determining your optimum corrosion control treatment. Your ultimate goal is to make the needed treatment changes and minimize any adverse affect to the lead and copper levels. Lead and copper have action levels and the optimum corrosion control treatment water quality parameters usually takes a back seat to other treatment options. Educate your customers and keep them informed when you are make treatment changes. All treatment changes must have prior approval from the DWP.

Bypassing a Cross Connection Control Device Contaminates Workplace: An inexperienced Boiler Technician at a manufacturing facility believes he can resolve a problem with the boiler by adding an additional feed line. So he plumbs a feed line directly to a 2-inch water line about 10 feet away and by-passes the reduced pressure zone cross connection control device. Anyone care to guess how long it took for the pressure from the boiler to overwhelm the water system's pressure and start sending chemically treated boiler water out into the manufacturing facility and ultimately out into the city's water distribution system? The Boiler Technician's supervisor spotted the cross connection, touched the line, found out it was hot and immediately eliminated the cross connection. The manufacturing facility started flushing their water mains and then notified the water system. The water

system reacted immediately and put their emergency plan into action. Quick decisive action by the water system superintendent and operators prevented the possible spread of the contamination. The water system notified all of the customers in the area not to use the water, then notified DWP and the City Manager. Water tests revealed that the contamination did not reach the water distribution system. The water system had recently stepped up their cross connection control program and had previously educated the supervisor on cross connection control devices. The supervisor used his knowledge to eliminate the cross connection and inform the water system.

Fire Fighter Break Water Main: Fire fighters in the process of fighting a large building fire determine they need more water pressure. They know if they can by-pass a pressure reducing valve with a fire pump they can pull water from another pressure zone and increase the water pressure. They cross connect the fire pump from one hydrant to another and by-pass the valve; creating two problems for the water system. The first problem created is the contamination from the pump and hoses as they pump water from one section of the distribution system into another section. The second problem created is the water hammer created by turning on the pump caused a main break. Work with your local fire fighters so they understand the need to avoid water hammers. Water system operators training the local fire fighters may have prevented the main break. A main break could cause a total loss of water pressure and endangered the lives of the fire fighters.

Murphy's Law "Anything That Can Go Wrong Will Go Wrong": A water system finds a small leak in the caustic storage tank (shortly after a large delivery). The tank is about 2/3 full and the leak is between the 1/2 tank and 1/3 tank marks. A tank truck is called in to pump the tank down below the leak so the tank can be inspected to determine if the tank can be repaired. The pumping goes as planned until they disconnect the storage tank from the tank truck. While disconnecting the hose from the valve at the bottom of the storage tank the valve breaks. The caustic that was in the tank, about 1/3 of the tank, drains out into the containment area. The water system now has to pump what they can out of the containment area and then clean the residual so the tank and the valve can be repaired.

I hope that these true stories have proven interesting and educational. Public water system operators do an incredibly good job. Sometimes events are beyond the operator's control, yet they still end up cleaning the mess.



Drinking Water State Revolving Loan Fund

By Roger Crouse



Legislative Report

On April 30, 2004, the Legislature adjourned without passing a bond package. The Drinking Water Program had requested a \$2.0 million bond as state match for the Drinking Water State Revolving Loan Fund (DWSRF). The \$2.0 million would have been used to match \$10.0 million from the

Environmental Protection Agency (EPA) 2004 DWSRF.

Without the state match the Drinking Water Program will be unable to access the federal dollars. If the Drinking Water Program does not receive the federal dollars, most construction project requests will not be met. The

Drinking Water Program is investigating all options to continue this valuable program next year.

Despite the discouraging ending, the Drinking Water Program would like to thank the many people who worked diligently to secure the state match.

2004 Request for Projects

Despite the uncertainty of the bond funds, the Drinking Water Program will still be requesting project submittals for the 2005 construction season. An information packet and application will be mailed to all eligible water systems during the week of July 12, 2004. Project submittals due September 17, 2004. Water systems eligible for the DWSRF program include all community water systems and all non-profit, non-community water systems. If you do not receive an application or have any questions, please contact Roger Crouse at (207) 287-5684 or roger.crouse@maine.gov.



Disinfection Byproduct Rule Reporting Requirements

By Jennifer Hitchcock

Effective January 1, 2004, **all community and non-transient non-community public water systems** that add chlorine or use any other disinfectant are required to monitor for the Disinfection Byproducts (DBP) Rule.

All water systems affected by the DBP Rule are required to report results of chlorine residual testing on a quarterly basis. All other required monitoring performed on a quarterly basis, such as TTHM, HAA5, TOC, Bromate, and Chlorite should be reported on a quarterly basis as well. Systems required to monitor on a yearly basis should report those disinfection byproduct results after testing has been completed.

Monthly operating reports (MOR-005 and MOR-006) are specifically designed for this purpose. **Large surface water (SW)** systems (populations of 10,000 and greater) should use MOR-005, while **all other SW** (populations less than 10,000) and **all groundwater** systems should use MOR-006. Remember that MOR-005 and MOR-006 should be completed and sent to the Drinking Water Program by the 10th of the month following each quarter. For example, results for the 1st Quarter of 2004 should have been submitted by April 10, 2004, and the 2nd quarter results should be submitted by July 10th.

Monthly operating report forms can be downloaded from the Drinking Water Program web site, <http://www.medwp.com>, under the "Download Documents" section. These reports are necessary to maintain compliance with the DBP Rule. Failure to submit reports to the Drinking Water Program in a timely manner will result in a monitoring and reporting violation.

If you have any questions about MOR-005 or MOR-006, or about the DBP Rule in general, please contact Jennifer Hitchcock at (207) 287-3962 or by e-mail at jennifer.hitchcock@maine.gov.



Wake Up Your System – It's Summer

By Nathan Saunders

Many of the water systems regulated by the Drinking Water Program are seasonal. Boys and girls camps, restaurants, sporting camps and motels open after hibernating all winter and begin serving drinking water to the public. If you operate a seasonal system, follow the steps below to help avoid common drinking water problems that can cause unsafe water.



1. Inspect your well. Take off the well cap and check to see if it has spider webs or insects inside. If it does, clean them out with a shop vacuum. Bugs can get in your water and cause bacteria to spread in your water system. To keep bugs out of your well, install a vermin-proof, watertight well cap on top of the well casing. This special well cap has built in screens that let your well “breathe” without letting bugs in. You can buy a vermin proof, watertight well cap from your local well driller. At the very least, install insect screening over the existing well cap and tightly secure it to the well casing and around the conduit with duct tape.

2. Disinfect your well. Water in your pipes and in your well sits over the winter and stagnates. The onset of warmer weather can lead to the growth of bacteria. You can kill those bacteria by adding bleach to your well. The bleach that you use must be approved for disinfecting drinking water by the EPA or NSF International (NSF). Look for an EPA registration number or the NSF logo (blue circle w/ white letters) on the bottle. Using the table on the right, determine the appropriate amount of chlorine bleach to pour into your well casing.

Disinfection a 6” Diameter Well

Well Depth	Quantity of Bleach (6%)
80 feet	¼ gallon
160 feet	½ gallon
240 feet	¾ gallon
320 feet	1 gallon

3. Pressurize the system. Turn on the faucets at the end of the system to get chlorinated water into all of the pipes. After you can smell chlorine coming out of all of the taps, shut the water off and let it sit overnight. Chlorine works best if it is allowed to stay in contact with contaminated materials for a long time.

4. Flush the system. After you have let your water sit overnight, turn on the faucets and let them run. This will help to move the chlorinated water out of the system. Don't flush chlorinated water into your septic system because the chlorine can kill good bacteria in your septic system.

5. Flush your storage tanks. Be sure to drain and refill your water storage tanks to remove rusty water and to ensure that the valves still work. Continue flushing until the water is no longer discolored.

6. Take a hike. If you have lines that run over the ground, take a walk around to make sure that they are not leaking. Leaking lines can back siphon bacteria into your drinking water, and can increase your power costs because you'll be pumping water that you do not use.

7. Wait several days and take a bacteria test. Ask your laboratory for an **operations and maintenance (O&M)** bacteria test. A test that indicates no bacteria are present is the only way to ensure that your customers will enjoy safe drinking water.

A Shocking Procedure

By Chlo Rination & Disi Nfection

When you need to disinfect your public water system, you need “A Shocking Procedure”. Shocking your system with chlorine is recommended to wake up a system after winter hibernation, after a well pump is pulled or work has been completed on the distribution system, after known or suspected contamination, or after a positive bacteria sample result shows that a system is contaminated. To shock a water system properly, planning, preparation, proper methods, proper materials, and time are required; simply pouring a slug of bleach into a well may not fully disinfect the water system! In addition, shocking a water system requires that a 50-ppm chlorine solution be in contact with your system for a minimum of 12 hours. While your water

system is filled with this high level of chlorine, you cannot consume water from your system! The system must be properly flushed before using the water for consumption (drinking, making ice cubes, washing foods, brushing teeth, etc.) Other issues, including chlorine's effectiveness at different pH levels, may need to be considered when shocking your water system.

To provide public water systems with a shocking procedure, the “Recommended Procedure for Shock Chlorination of Bedrock Water Wells” has recently been added to the Maine Drinking Water Program web site, <http://www.medwp.com>, under the Field Services Section, Technical Services. Refer to this procedure for complete instructions on properly and successfully shocking your bedrock well.



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Water Operators

By Beth Pratte

Grand-parented Status Expiration:

We are down to the wire. Grand-parented status for all water operators will expire September 30, 2004. All systems requiring licensed operators need to fill out the Public Water System Licensed Operator Form and submit it to the Drinking Water Program (DWP).

Water Operator Examinations:

Exam Date	Exam Location	Application Deadline
October 19, 2004	Augusta	September 4, 2004
October 21, 2004	Presque Isle	September 4, 2004

Examination applications are available on the DWP website at <http://www.medwp.com/> or call Carol Champagne at (207) 287-5699.

Return applications to:
Board of Licensure of Water System Operators
Maine Drinking Water Program
11 State House Station
Augusta, ME 04333-0011

Up to three examinations are free for operators of systems serving populations under 3,300. Pre-exam training courses are available through the Maine Rural Water Association; their telephone number is (207) 729-6569.

2004 License Renewals:

It's not too early to think about license renewals for those expiring December 31, 2004. The continuing education requirements are in Training Contact Hours (TCH):

Classification	Training Contact Hours (TCH)
Very Small Water System (VSWS)	6.0
Class I	12.0
Class II	18.0
Class III and IV	24.0

Check the Drinking Water Program website, <http://www.medwp.com>, for links to training organizations.

April Water Operator Exams:

The results are in for the April examinations. The following numbers of examinees passed:

Treatment Classification	#	Distribution Classification	#
Very Small Water System	39	Class I Distribution	40
Class I Treatment	34	Class II Distribution	20
Class II Treatment	13	Class III Distribution	11
Class III Treatment	3	Class IV Distribution	7
Class IV Treatment	4		

Congratulations to all the successful examinees and to all new licensed operators!



Drinking Water Program Staff

Joy Adamson	287-5681	Source Water Protection Researcher & Planner	joy.adamson@maine.gov
Nancy Beardsley	287-5674	Drinking Water Program Director	nancy.beardsley@maine.gov
David Braley	287-3194	Wellhead Protection Coordinator, SWP	david.braley@maine.gov
Haig Brochu	287-6542	New Well Approval Coordinator	haig.brochu@maine.gov
Dawn Carpenter	287-6471	Enforcement Coordinator	dawn.carpenter@maine.gov
Carol Champagne	287-5699	Operator Certification & Well Driller's Board Clerk	carol.champagne@maine.gov
Roger Crouse	287-5684	Drinking Water Program Assistant Director	roger.crouse@maine.gov
Denise Douin	287-8481	South-Central & Southern Maine Field Services	denise.douin@maine.gov
Greg DuMonthier	561-4299	North-Central Maine Field Services	greg.dumonthier@maine.gov
Jeff Folger	287-5682	New Well Approval Specialist	jeff.folger@maine.gov
Robin Frost	287-8411	GIS Coordinator	robin.frost@maine.gov
Larry Girvan	768-3610	Northern Maine Field Engineer, SRF	larry.girvan@maine.gov
Rod Hanscom	561-4363	North-Central Maine Field Engineer, SRF	rod.hanscom@maine.gov
Thomas Heiss	287-6473	Financial Coordinator	thomas.heiss@maine.gov
Jennifer Hitchcock	287-3962	Surface Water Treatment Rule Coordinator	jennifer.hitchcock@maine.gov
Dana Ivers	287-6472	Cross Connection, Lead & Copper Rule Coordinator	dana.ivers@maine.gov
William Johnson	287-5678	Capacity Development / Security Coordinator	william.johnson@maine.gov
Eben Joslyn	822-2179	Southern Maine Field Engineer, SRF	eben.joslyn@maine.gov
Lindy Moceus	287-8402	Phase II / Phase V Rule Coordinator	lindy.moceus@maine.gov
Robert Peterson	287-1979	SDWIS – Data Manager	bob.peterson@maine.gov
Geraldine Poulin	287-8412	Data Management	geraldine.poulin@maine.gov
Cheryl Pratt	287-5694	Secretary	cheryl.pratt@maine.gov
Beth Pratte	287-5295	Water Operator Specialist	beth.pratte@maine.gov
David Robbins	287-8403	Compliance Section Manager	david.robbins@maine.gov
Linda Robinson	287-5545	Total Coliform Rule Coordinator	linda.robinson@maine.gov
Nathan Saunders	287-5685	DWSRF & Field Services Manager	nathan.saunders@maine.gov
Fran Simard	287-8074	Secretary	fran.simard@maine.gov
Andrews Tolman	287-6196	Source Water Protection Section Manager	andrews.l.tolman@maine.gov
Tera Tower	287-5680	Enforcement & Administrative Section Manager	tera.tower@maine.gov
Teresa Trott	287-7485	Operator Licensing & Environmental Review Coordinator	teresa.trott@maine.gov
Scott Whitney	287-8487	Bottled Water, CCR, Radionuclide & Radon Rule	scott.whitney@maine.gov
Selena Vigue	287-7690	Secretary	selena.vigue@maine.gov

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The Newsletter of the Drinking Water Program
11 State House Station, 161 Capital Street
Augusta, Maine 04333-0011

TEL: (207) 287-2070 TTY: (207) 287-5550 FAX: (207) 287-4172
Web Address: <http://www.medwfp.com>

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